8890

ORIGINAL

Diag. Cht. No. 4116-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PF 10-6-66 Office No. H-8890

LOCALITY

State HAWAII

General locality KAHOOLAWE ISLAND

Locality CAPE KUIKUI ~~& NE SHORE~~ and Vicinity

19 66

CHIEF OF PARTY

CDR G.L. SHORT

LIBRARY & ARCHIVES

DATE 18 NOV 1970

USCOMM-DC 37022-P66

8890

FORM C&GS-537 (8-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO.

H-8890

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

PF 10-6-66

State HAWAII

General locality KAHOOLAWE ISLAND

Locality CAPE KUIKUI and Vicinity ~~--- NE SHORE~~

Scale 1:10,000 Date of survey 3/23/66 to 4/11/66

Instructions dated 12/6/65 Project No. OPR 419

Vessel USC&GS Ship PATHFINDER

Chief of party CDR G.L. SHORT

Surveyed by G.L. SHORT, R. ALLBRITTON, E. GELB, F. SMITH, L. CASANOVA

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by SHIP'S PERSONNEL

Graphic record checked by SHIP'S PERSONNEL

Protracted by SHIP'S PERSONNEL Automated plot by

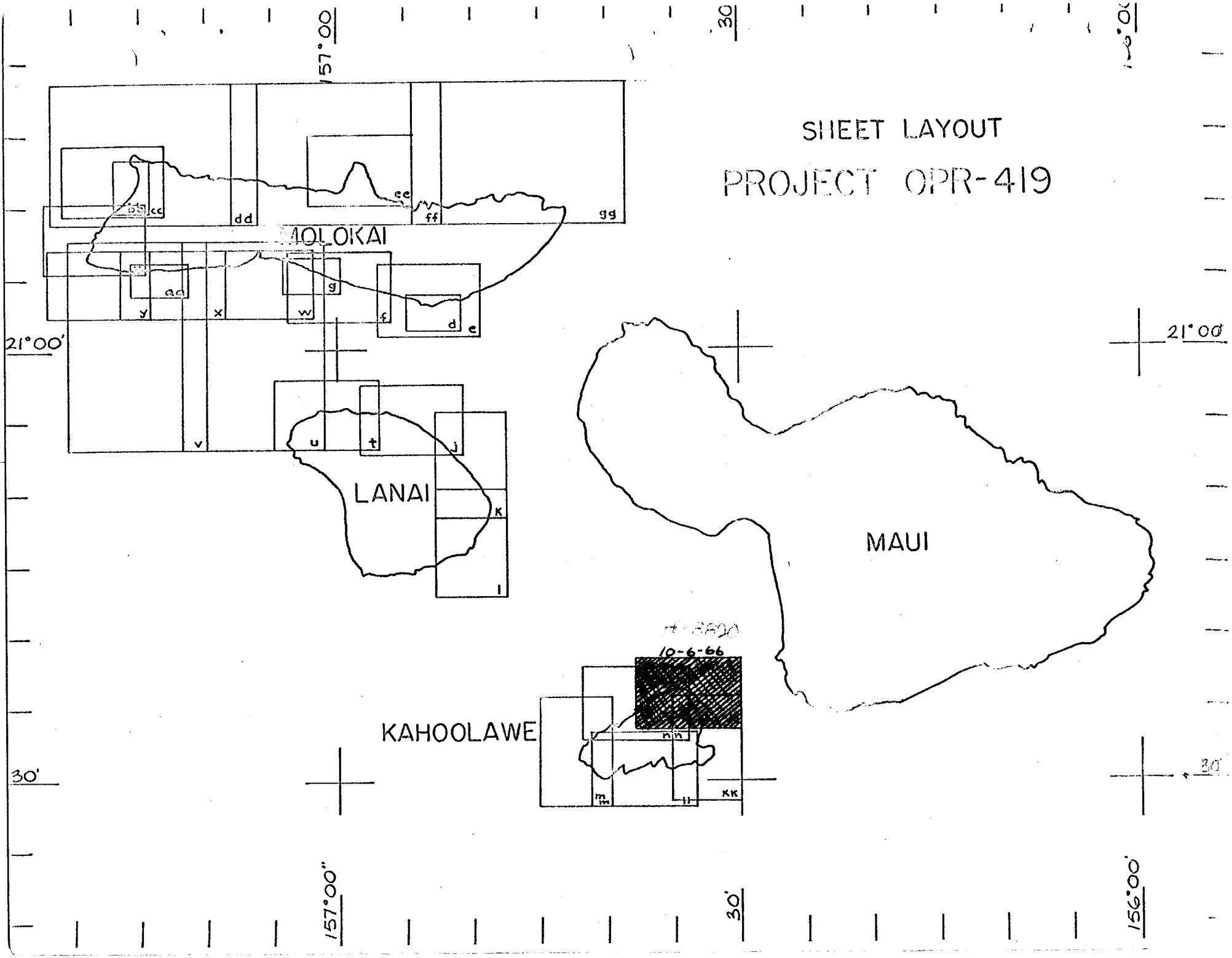
Soundings penciled by SHIP'S PERSONNEL

Soundings in fathoms ~~feet~~ at ~~MHW~~ MLLW

REMARKS: Verifier's report edited from rough notes by C.A.J. Pauw.

XHWW 3/14/92

USCOMM-DC 19086


SHEET LAYOUT
PROJECT OPR-419
MOLOKAI
LANAI
MAUI
KAHOOLAWE
10-6-66
157°00'
30'
21°00'
156°00'

Descriptive Report to accompany Hydrographic Survey
H-8890 Field No. PF 10-6-66

USC&GSS PATHFINDER

CDR G. L. Short Cmdg.

1966

Scale 1:10,000

A. PROJECT

This survey is part of OPR 419 with original instructions dated October 25, 1960 to the Survey Ship Surveyor and has various amendments, supplements and revisions. Revised Instructions: Project OPR 419-Hawaiian Islands, December 6, 1965 superseded all previous instructions and were the instructions by which the survey was conducted.

B. AREA SURVEYED

The area surveyed was the north east coast of Kahoolawe and was centered around the Cape Kuikui area. It was bounded on the west by longitude 156 37' and on the north by latitude 20 38' and on the east by a SE line starting at latitude 20 38' and longitude 156 33' and ending at 156 31' long. and 20 35.5' latitude. The shoreline is deserted and accessible by skiff or by foot overland. The island is a military reservation and not frequented by civilians. The coastline is rocky with occasional sandbeaches. Survey work started March 23, 1966 and ended April 11, 1966.

The survey junctions with contemporary surveys PF 10-4-66 (H-8888) on the west and PF 10-7-66 (H-8891) on the south. On the north and east the survey junctions with H-8679 (1962) and H-8583 (1962) which are 1:20,000 and 1:40,000 scales respectfully. Prior survey of the area is Reg. #2728 conducted in 1904 and is of 1:20,000 scale. ✓

C. SOUNDING VESSEL

All hydrography was accomplished by the Ship PATHFINDER and it's launches.

VESSEL	COLOR	DAY LETTER
PATHFINDER	blue	upper case
ML #2	violet	lower case
ML #4	brown	lower case ✓

D. SOUNDING EQUIPMENT

The Raytheon DE 723 fathometer ~~were~~ was used in determining depths. The following units were used:

VESSEL	UNIT
PATHFINDER	#557
ML #2	#940
ML #4	#141

The maximum depth obtained was 104 fathoms. Motor launches were used in depths of 0 fathoms to approximately 50 fathoms and the ship in areas of 20-100 fathoms. ✓

Instrument corrections for the launches were determined by bar-checks at 1,2 and 4 fathoms, twice daily.

Velocity corrections were obtained from an analysis of oceanographic data obtained at stations taken in the

Hawaiian Islands in early 1966 by the Ship PATHFINDER.

For details see references in section Q. ✓

E. SMOOTH SHEET

To be filled in by smooth plotter. See Ensign's Lowell Genzlinger's Report attached.

F. CONTROL

Visual control was used throughout the survey. ✓ Advance manuscripts were used to plot the photogrametric control. They are T-12123 and T-12124 and were compiled in 1962. Two signals were located by sextant cuts. ✓ They were NIP and VIA. The cuts are in Vol. 4 on pages 4,5,6,7,48,49 and 50. Three triangulation stations were used on the sheet as control. They are on the Old Hawaiian Datum.

Some trouble was experienced with control because ✓ signals NIP and VIA were originally photo-hydro located and were in error. As a result the lines were eratic and were replotted after the correct location was determined.

G. SHORELINE

Shoreline was taken from T-12123 and T-12124. Shoreline was verified by a shoreline verification run ✓ conducted on April 9, 1966. Some additionsl areas were marked as foul. Some inshore rocks and shoal areas were obscured by the texture and coloring of the water. These areas were located and sketched on April 9, 1966. In general it is impossible to obtain least depth over submerged rocks or rocks awash or to determine the ✓

low water line due to heavy surf conditions.

H. CROSSLINES

Crosslines constituted more than 7.3% of the linear miles run. There were no major discrepancies in crossings. Crossings were within two fathoms without corrections for tides or instruments. Some difficulty was encountered in the region of long. 156 34' 30" and lat. 20 36' 30" but was resolved when signals NIP and VIA were relocated and the days (c day ML#2) work replotted.

Resolved by Smooth plotter

I. JUNCTIONS

Junctions with PF 10-4-66 and PF 10-7-66 were sufficent and all soundings crossed with the exception of some soundings in the region of long. 156 32' 15" and lat. 20 35' 15". The soundings between positions 59a, 60a and 61a for ML#3 on PF 10-7-66 were scanned incorrectly. The values at the crossing do check if the depths are corrected. They should be corrected in the volumes and on the boat sheet. Soundings and junctions with H-8679 (1962) and H-8583 (1961), are satisfactory both in agreement and overlap. The largest single discrepancy is four fathoms.

Resolved by Smooth plotter see Ensign's Gemzlinger's Report

See smooth plotters report, JLS

J. COMPARISON WITH PRIOR SURVEYS

There are no pre-survey items to be investigated on this sheet. On prior survey Reg. #2728 there were soundings of 11 and 16 fathoms indicated in about 35 fathoms of water. A development was run but no indication was found of a shoal. It is of interest to note that these shoal aoundings were not on the chart; which indicates that

they were probably disproven earlier. Otherwise the soundings agreed within acceptable limits (plus or minus two fathoms).

K. COMPARISON WITH CHART

Chart #4130 published in August of 1964 is a 1:80,000 scale chart showing Kahoolawe Island. No new important dangers to navigation were discovered. Most soundings agreed as nearly as they could be transferred.

L. ADEQUACY OF SURVEY

This survey is adequate for charting and should supersede previous surveys.

M. AIDS TO NAVIGATION

There are no aids to navigation on this sheet.

N. STATISTICS

VESSEL	POSITIONS		LINIER MILES
PATHFINDER	251	+19	48.2
ML #2	771		94.3
ML #4	109	104	15.0
Total	1131	1149	157.5

19 additional Positions See Volume No 4 pages 48 to 51. incl.

There were approximately 10.0 square nautical miles of area covered by this hydrographic survey. There was one magnetic station observed at EGG 2, 1963. There were no bottom samples taken.

O. MISCELLANEOUS

None

P. RECOMMENDATIONS

None from boat sheet.

R. REFERENCES

A copy of a letter from the Director, Pacific Marine Center, dated 22 March 1966, onthe subject of bottom samples, is attached.

Fidel T. Smith
Lt(jg) USESSA

USC&GSS PATHFINDER
OPR. 419
PF 10-6-66

SMOOTH PLOTTER'S REPORT

The projection grid and triangulation stations were plotted by the electronic digital plotter at Pacific Marine Center.

Trouble was experienced in plotting signals NIP and VIA. The signals were originally located as photo-hydro signals, but were in error. Sextant cuts were then taken to relocate the signals. They were transferred directly from the manuscript to the smooth sheet, but it appeared the cuts had not been carefully plotted on the manuscript and were in error. They were replotted directly on the smooth sheet with a three-arm steel protractor using the sextant angles in the volume and no more trouble was experienced when the signals were used.

With all correctors applied, crosslines were in good agreement. The largest error in crossings in the area of 156°33'15" and 20°36'15" was 1.4 and 1.6 fms. The entry of correctors and the reduction of soundings were checked on the lines concerned, but exact agreement could not be made. Hydrography in the small bay between signals EGG and FUZ was difficult as a fix was impossible to obtain. Sounding lines close to shore were difficult to resolve as the area was quite rocky and signals were hard to see for a fix.

Phase corrections were entered using the average of the phase changes for each day on each vessel. To find the mean correction term for scale changes, the phase changes were grouped by day for each vessel. Similar phase changes, i.e., all A-B changes were grouped together and all B-C changes were grouped together. The mean was found of each group and yielded a mean corrector for each phase change of each day. Only good readable phase changes on a fathogram were used and the unclear phase changes were disregarded.

The phase correctors were figured accumulatively, i.e., if A-B mean corrector was +0.3 and B-C was +0.2, then the accumulative phase applied was +0.5 to all C scale soundings. It is, therefore, the addition of all mean phase correctors. down to that scale.

The mean corrector term corrects the deeper scale to agree with the next shoaler scale. The accumulative corrector term corrects the scale to the A scale.

Junctions could not be compared with sheets PF 10-4-66 and PF 10-7-66 because the smooth sheets were incomplete as of this date.

Under paragraph "I", the hydrographer mentioned that there was a discrepancy of 4 fathoms in comparing with prior surveys H-8679 and H-8583 in the area of Lat. 20 37 45 and Long. 156 35 50 (positions 117B to 125B). After all correctors, which amounted to an average of between plus 3 to 4 fathoms, were applied there was good agreement in

the junction soundings.

A development was plotted to investigate a shoal which was indicated in prior survey #2728. The development was not shown on the boat sheet but was on a separate overlay. No indication of a shoal was found from the development. No shoal soundings were indicated on the chart so probably it had been disproven earlier.

The survey is adequate for charting and should supersede previous surveys.

Lowell Genzlinger

Lowell Genzlinger
Ensign USESSA

APPROVAL SHEET

REGISTRY NO. 8890 (PF 10-6-66)

The field work on this sheet was inspected where conditions permitted. The records and smooth sheet have been examined and approved.

The survey is considered complete and adequate for charting purposes and no additional field work is recommended.

Date Jan 27, 1966

G.L. Short
Cdr., ESSA
Cmdg. Ship PATHFINDER

H 8890

TIDE NOTE

Hydrography was controlled by a bubbler tide gage installed at Kaumalapau harbor on Lanai Island. However due to the poor records received (see attached memo dated 11 August, 1966) the hourly heights were obtained from Washington to reduce the soundings. The hydrography was run using the 135 time meridian while the gage was on the 150 time meridian so 1 hour was added for the hourly heights. MLLW, computed from level records, is 1.9 feet above staff zero.

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 31, 1967

~~Nautical Chart Division~~ Pacific Marine Center

Plane of reference approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 8890

Locality: Kahoolawe Island, Hawaii

Chief of Party: G.L. Short (1966)

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):
Honolulu, Hawaii

Height of Mean High Water above Plane of Reference is as follows:
1.4 feet

Remarks

J. M. Symons
Chief, Tides and Currents Branch

USCOMM-DC 6680-P64

Form CD-121A (8-63) (Prcs. by A.O. 206-10) UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

TO : The Commanding Officer
USC&GS Ship PATHFINDER
1801 Fairview Avenue, East
Seattle, Washington 98102

DATE: August 11, 1966

In reply refer to:
C3312-155-CSS 8

FROM : Chief, Tides Section
Oceanography Division

SUBJECT: Tidal data, OPR-419

Requested hourly heights are enclosed. Honolulu tabulations are furnished in lieu of Kaumalapau observations. The Kaumalapau record showed evidence of a shifting datum and had to be discarded. MLLW, computed from level records, is 1.9 ft. above staff zero.

Mean lower low water at the other stations is:

Kamalo	2.2 ft. on staff No. 1
Kaunakakai	3.2 ft. on staff

Reference to new staff at Kamalo and requested July observations at Honolulu will be furnished as soon as possible.

Martha A. Winn

Martha A. Winn

Enclosures

GEOGRAPHIC NAMES PENCILLED ON SMOOTH SHEET

H-8890 (PF-10-6-66)

ALALAKEIKI CHANNEL

CAPE KUIKUI

HAKIOAWA

KAHOOLAWE ISLAND

KANAPOU BAY

KEALAIKAHIKI CHANNEL

KUHEIA BAY

LAE O ULE

LAE O KUIKUI

USCGSS PATHFINDER
H.O. L. Sheet, Comdg.
1966

Velocity corrections to be applied to all 1966 hydrography on sheets

EP 10-5-66, EP 10-1-66, EP 10-2-66, EP 10-3-66, EP 10-4-66,
EP 10-5-66, EP 10-6-66, EP 10-7-66, EP 10-8-66, EP 20-1-66, EP 20-2-66

TO DEPTH (fms)	CORRECTION (fms)	TO DEPTH (fms)	CORRECTION (fms)
0.0 - 3.0	0.00	72.6 - 77.2	3.2
3.1 - 5.3	0.1	77.3 - 82.0	3.4
5.4 - 7.8	0.2	82.1 - 86.7	3.6
7.9 - 10.0	0.3	86.8 - 91.3	3.8
10.1 - 12.3	0.4	91.4 - 95.8	4.0
12.4 - 14.5	0.5	95.9 - 100.5	4.2
14.6 - 16.8	0.6	100.6 - 112	4.5
14.9 - 19.5	0.7	113 - 125	5.0
19.6 - 21.5	0.8	126 - 140	5.5
21.6 - 23.8	0.9	141 - 158	6.0
23.9 - 26.0	1.0	159 - 178	6.5
26.1 - 28.3	1.1	179 - 200	7.0
28.4 - 31.6	1.2	201 - 232	7.5
31.7 - 36.2	1.4	233 - 273	8.0
36.3 - 41.0	1.6	274 - 320	8.5
41.1 - 45.3	1.8	321 - 368	9.0
45.4 - 50.0	2.0	369 - 418	9.5
50.1 - 54.5	2.2	419 - 460	10.0
54.6 - 59.0	2.4	461 - 495	10.5
59.1 - 63.5	2.6	496 - 527	11.0
63.6 - 68.0	2.8	528 - 558	11.5
68.1 - 72.5	3.0	559 - 584	12.0

*All velocity corrections are positive and to be added

SHIP PATHFINDER
OPR 419

DRAFT CORRECTIONS

DATE	DRAFT(ft) mdshps	DRAFT(fms) mdshps	INITIAL	FATH. INSTR. CORR.	DRAFT CORR. +
Feb. 27	15.0	2.5	2.0	-0.1	0.4
Mar. 12	14.7	2.4	2.0	-0.1	0.3
13	14.5	2.4	2.0	-0.1	0.3
15	14.3	2.4	2.0	-0.1	0.3
16	14.3	2.4	2.0	-0.1	0.3
17	13.9	2.3	2.0	-0.1	0.2
23	15.0	2.5	2.0	-0.1	0.4
24	14.9	2.5	2.0	-0.1	0.4
26	14.8	2.5	2.0	-0.1	0.4
27	14.7	2.4	2.0	-0.1	0.3
28	14.4	2.4	2.0	-0.1	0.3
29	14.2	2.4	2.0	-0.1	0.3
30	14.2	2.4	2.0	-0.1	0.3
Apr. 6	15.1	2.5	2.0	-0.1	0.4
7	15.0	2.5	2.0	-0.1	0.4
8	15.0	2.5	2.0	-0.1	0.4
9	14.9	2.5	2.0	-0.1	0.4
11	14.5	2.4	2.0	-0.1	0.3
12	14.4	2.4	2.0	-0.1	0.3
13	14.3	2.4	2.0	-0.1	0.3
14	14.2	2.4	2.0	-0.1	0.3
21	14.7	2.4	2.0	-0.1	0.3
22	14.6	2.4	2.0	-0.1	0.3
23	14.5	2.4	2.0	-0.1	0.3
24	14.4	2.4	2.0	-0.1	0.3
25	14.2	2.4	2.0	-0.1	0.3
26	14.0	2.3	2.0	-0.1	0.2
27	13.8	2.3	2.0	-0.1	0.2
28	13.7	2.3	2.0	-0.1	0.2

HAWAIIAN ISLANDS OPR-419
USC&GS Ship PATHFINDER
CDR G. L. Short, Cmdg.
1966 ECHO CORRECTIONS
PF 10-6-66

vessel	date	day	corrector 0-31 fms.	31-101fms.
ML #2	3/23/66	a	+0.4	+0.4
"	3/25/66	b	+0.3	+0.2
"	3/28/66	c	+0.3	+0.2
"	3/29/66	d	+0.3	+0.2
"	3/30/66	e	+0.4	+0.4
"	4/9/66	f	+0.4	+0.4
"	4/11/66	g	+0.4	+0.4
ML #4	3/24/66	a	+0.4	+0.4

USC&GSS PATHFINDER
G. L. Short Cmdg.
Opr. 419
PF 10-6-66
Phase Corrections

Vessel	Day	Scale	Correction
PATHFINDER	A	A-B	+0.7
		B-C	+1.5
	B	A-B	+0.5
		B-C	----
	C	A-B	+0.5
		B-C	+1.0
Launch #2	a	A-B	+0.2
	b	No scale changes	
	c	A-B	0.0
	d	A-B	-0.1
	e	A-B	0.0
	f	A-B	0.0
	g	A-B	-0.1
Launch #4	a	No good scale changes	

SIGNAL LIST

NAME	SOURCE	TYPE
OPU	EGG 2,1963	TRIANGULATION
MOLO	MOLOKINI 2,1950	
WET	WET 2,1963	
ACE	T-12124	PHOTO-HYDRO
ART	T-12123	
BED	"	
BUM	T-12124	
CAT	"	
DOC	"	
DUN	T-12123	
EGG	"	
FUZ	"	
GEM	"	
HOP	"	
ION	"	
JIB	"	
KEN	"	
LAD	"	
MAX	"	
OAK	"	
PRO	"	
RIO	"	
SKI	"	
TOM	"	
WAG	T-12124	
YEA	T-12123	
ZOO	T-12124	
NIP	Vol. 4 pp 4,5,6,	HYDROGRAPHIC
VIA	7,48,49and 50	

FORM CD-121 (9-22-59)
(PRES. BY A.O. 206-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TO : Director
Pacific Marine Center

DATE: March 15, 1966

FROM : Commanding Officer
Ship PATHFINDER

SUBJECT: REVISED INSTRUCTIONS, PROJECT OPR-419 DATED DECEMBER 6, 1965

Obtaining bottom characteristics around Kahoolawe Island is not considered safe due to the presence of unexploded ordnance in the restricted area around the island. If the bottom sampler dropped on a piece of ordnance equipped with an impact fuse, or any other piece with an unstable explosive, an explosion damaging to the ship and personnel could result. The ship is not anchored at Kahoolawe Island because of this danger.

Bottom characteristics from previous surveys are shown on the current charts of the area.

It is requested that the subject instructions be amended to omit bottom sampling in the restricted area surrounding Kahoolawe Island.

G. L. Short

ROUTING
.....OPNC.....
.....Proj.....
.....TAsst.....
.....EDat.....
.....HDat.....
.....ADM.....
.....Pers.....
.....Supp.....
.....Whse.....
.....OCEO.....
.....Phys.....
.....Geo.....
.....Lab.....
.....FAC.....
.....Inst.....
.....Base.....
Return to PROJ

F-005

FORM CD-121 (6-63) (PRES. BY A.O. 206-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TO : Commanding Officer
USC&GSS PATHFINDER

DATE: 22 March 1966

In reply refer to: 4050/01.3-5
CF22

FROM : Director
PACMARCEN

SUBJECT: Bottom Samples - Kahoolawe Island

Permission is granted to omit bottom samples in the vicinity of Kahoolawe Island, At no time are project instructions intended to jeopardize the safety of personnel or equipment.

A statement in the pertinent descriptive reports stating why bottom samples were omitted is all that is required. A formal amendment to the project instructions will not be written.

Harold J. Seaborg

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8890

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Alalakeiki Channel										1
Cape Kuikui										2
Hakioawa (point)										3
Kahoolawe Island										4
Kanapou Bay										5
Kealaikahiki Channel										6
Kuheia Bay										7
Puhi Koheo Hale										8
Ule Point										9
										10
										11
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										27

PREPARED BY

Frank W. Pickett

CARTOGRAPHIC TECHNICIAN

APPROVED BY

Joseph Knight

CHIEF GEOGRAPHER

FORM C&GS-946
(REV. 11-65)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-8890

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS	2
DESCRIPTIVE REPORT	1	OVERLAYS	1

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	8					
BOXES						

T-SHEET PRINTS *(List)* ~~T-12123 and~~ T-12124

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1149
POSITIONS CHECKED		520		
POSITIONS REVISED		38		
DEPTH SOUNDINGS REVISED or added		325		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		197		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		16		
JUNCTIONS		40		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		144		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		200		
TOTALS		400		

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY Clarence R Lehman	BEGINNING DATE Sept 22, 1969	ENDING DATE Dec 2, 1969
REVIEW BY	BEGINNING DATE	ENDING DATE

USCOMM-DC 36271-P65

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC MANUAL, 6-94)

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H-8890

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R
Note: The verifier should first read the Descriptive Report for general information and problems.		
1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None	✓	
2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None	✓	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. added in pencil Descriptive Report. Remarks Required: -- None	✓	
Part II - SHORELINE AND SIGNALS		
Source of shoreline signals Advance Manuscripts Remarks Required: -- List all surveys T-12123 & T-12124		
a. Give earliest and latest dates of photographs no date		
b. Field inspection date	✓	
c. Field Edit date July 1965		
d. Reviewed-Unreviewed (for Hydro)		
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.	✓	
6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None	✓	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.	✓	
Part III - JUNCTIONS		
Note: Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None	✓	
. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None	✓	

Part III - JUNCTIONS (Continued)	CL	R
10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of **Butt** junctions and areas which are **SUPERSEDED.**		
Part IV - VOLUMES		
11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None	✓	
12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:		
(a) rocks ✓		
(b) line turns ✓		
(c) position values of beginning and ending of lines ✓		
(d) bar check or velocity correctors ✓		
(e) time recording ✓		
(f) notes or markings on fathograms ✓		
(g) was reduction of soundings accurately done? ✓		
(h) was scanning accurate? ✓		
(i) were peaks at uneven intervals missed? ✓		
(j) were stamps completed? ✓		
(k) references to adjacent features ✓		
Part V - PROTRACTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	✓	
14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None	✓	
15. All detached positions locating **critical** soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	✓	

Part V - PROTRACTING (Continued)	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number. transparent Long & Short Oct. 17, 1969	✓	
Part VI - SOUNDINGS		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning. good legibility - some errors in spacing - and scanning.	✓	
Part VII - CURVES		
23. The depth curves have been inspected before inking. By CAJP Remarks Required: -- By whom was the penciled curves inspected. & this Verifier.	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines ✓ b. From soundings in orange c. Approximate position of sketched curve is dashed orange ✓ d. Approximate position of shoal area not sounded in black dashed ✓ Remarks Required: -- None	✓	
25. Depth curves were satisfactory except as follows: inshore areas rough. (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	✓	

Part VIII - AIDS TO NAVIGATION	CL	R
26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	✓	
27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	✓	
Part IX - BOAT SHEET		
28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	✓	
Part X - GENERAL		
30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
33. The bottom characteristics are adequately shown. Remarks Required: -- None	✓	
Part XI - NOTES TO THE REVIEWER		
34. Unresolved discrepancies and questionable soundings.		
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
36. Supplemental information.		

Verified by Clarence R. Lehman

Date Dec. 2, 1969

VERIFIERS NOTES

H-8890 PF-10-6-66

D. SOUNDING EQUIPMENT

Stylus arm lengths were scaled for all fathograms; only on 3 days were appreciable corrections noted, they are:

"f" day Launch No. 2 echo sounder No. 940 - 0.5%

"g" day Launch No. 2 echo sounder No. 940 - 0.5%

"a" day Launch No. 4 echo sounder No. 141 - 1.5%.

The percent of stylus arm correction was entered in the sounding volumes at the beginning of each day's work. The entries are made in red ink and correctors shown in the initial columns.

E. SMOOTH SHEET

Crossline descrepancy at Latitude 20°36'15" and Longitude 156°37'15" as mentioned in the Smooth Plotter's Report was resolved by the verifier. The difficulty here was mostly erroneous reading of the fathogram in an area of pronounced spiking. See fathogram for "e" day Launch #2 of March 30, 1966.

G. SHORELINE

Smooth sheet shorelines have been checked by the verifier and compared to manuscripts T-12123 and T-12124 as well as the boat sheet shorelines. Verifier made only

minor corrections - mostly small omissions such as elevation of rocks.

H. CROSSLINES

About 8% of the sounding lines are cross lines.

The discrepancy mentioned in the ship's report has been resolved. The problem was mainly in the location of signal NIP which was corrected by the smooth plotter. The addition of stylus arm corrector by the verifier further dismissed differences at the crosslines. All crossline soundings now appear to be satisfactory.

I. JUNCTIONS

Junction soundings from four different contemporary surveys have been transferred to this survey. They are:

H-8888 (1966) to the West shown in purple

H-8583 (1961) to the North shown in orange

H-8679 (1962) to the East shown in brown

H-8891 (1966) to the Southeast shown in red.

All junctions are complete and acceptable; depth curves have been flared in to join.

Respectfully submitted,

Clarence R. Lehman
Carto. Tech.

Approval Sheet

This smooth sheet has been inspected and meets the requirements of the Hydrographic Manual. (Note: Exceptions are noted in the verifier's report.)

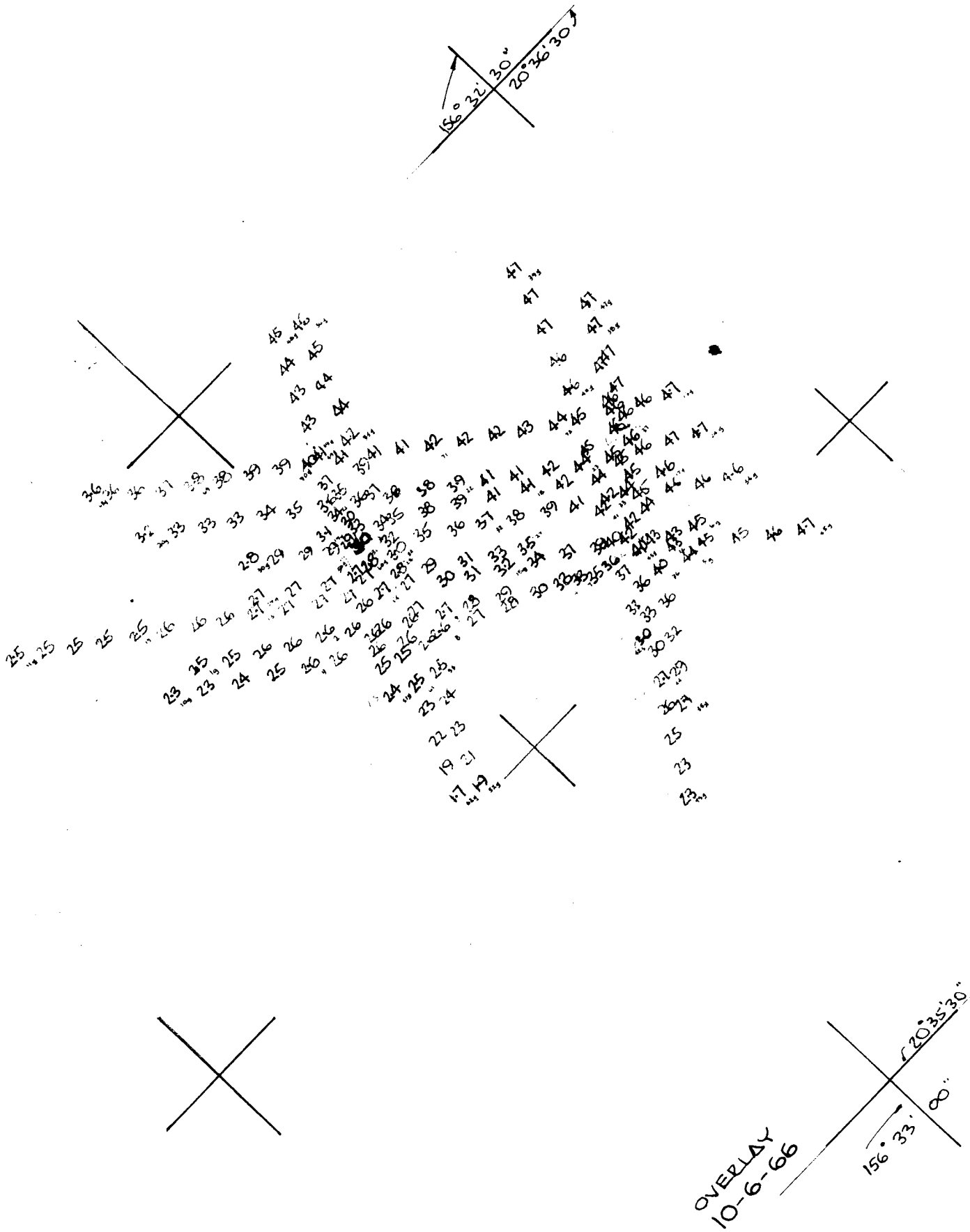
Examined and Approved

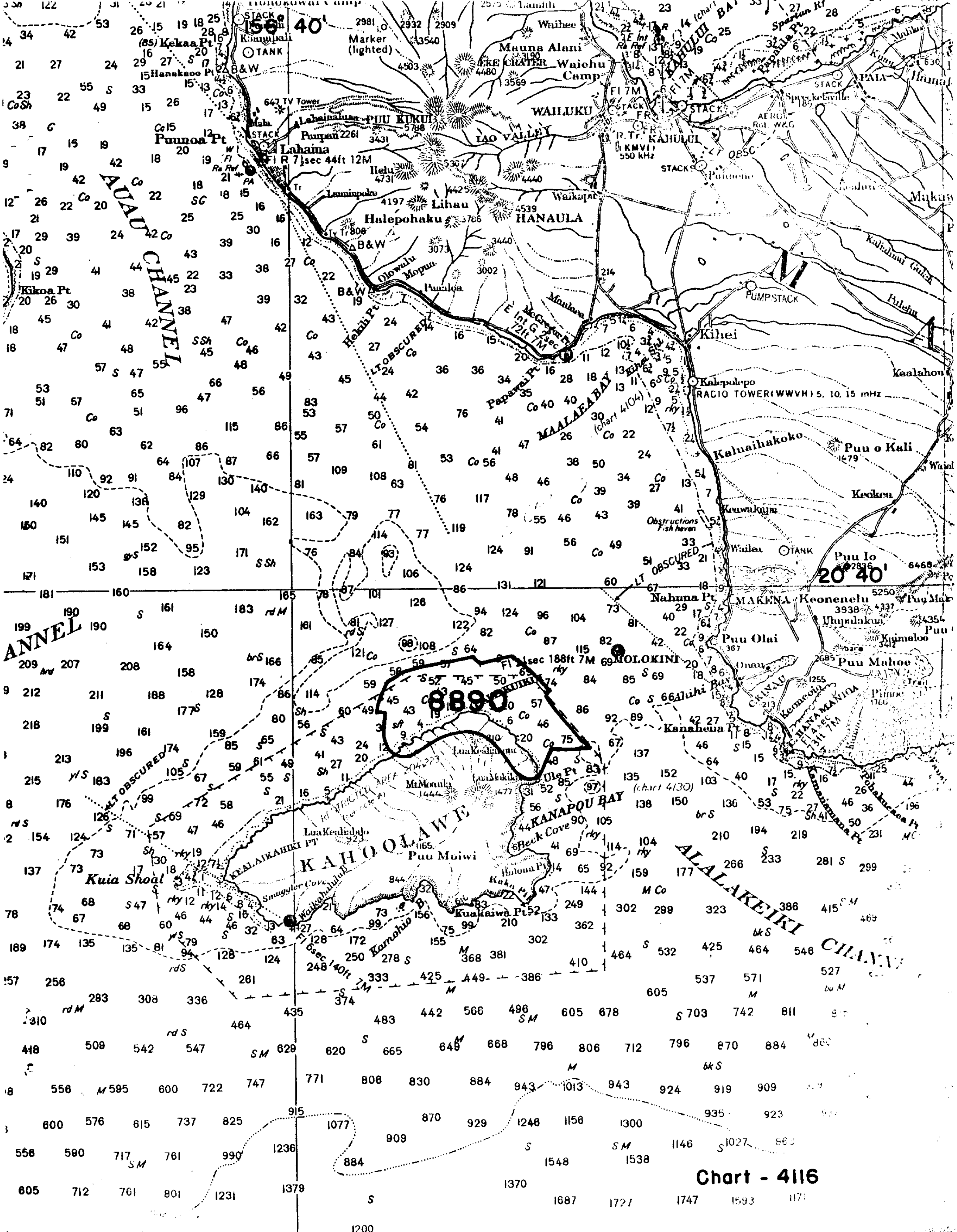
Cornelius A.J. Pauw
Cornelius A. J. Pauw
Cartographic Tech.

William M. Martin
William M. Martin
Supervisory Carto. Tech.

Approved and Forwarded

for
K. William Jeffers, CDR, NOAA
Chief, Processing Division, PMC


156° 32' 30"
20° 36' 30"
OVERLAY
10-6-66
156° 33' 00"
20° 35' 30"



156° 40'
Kekaa Pt
Hanakaoo Pt
Puunoa Pt
Lahaina
Lahainaluna
Puu Kukui
Puupan
Iao Valley
Helu
Launiupoko
Lihau
Halepohaku
Hanaula
Waikapu
Waihee
Mauna Alani
Eke Crater
Waiehu Camp
Wailuku
Kahului
Kahului Bay
Spreckelsville
Paia
Puunene
Marker (lighted)
TV Tower
Auau Channel
Kikoa Pt
Olowalu
Mopua
Ukumehame
Hekili Pt
LT OBSCURED
McGregor Pt
Papawai Pt
Maalaea Bay
(chart 4104)
Kihei
Kalepolepo
RADIO TOWER (WWVH) 5, 10, 15 mHz
Kaluaihakoko
Puu o Kali
Keokea
Kamaole
Obstructions Fish haven
Wailea
Puu Io
20° 40'
Nahuna Pt
Makena
Keonenelu
Puu Olai
Molokini
Ahihi Bay
Puu Mahoe
Cape Kinau
Kanahena Pt
Keoneoio
La Perouse Bay
Kahoolawe
Lua Makika
Ule Pt
Kanapou Bay
Beck Cove
Halona Pt
Kaka Pt
Kuakaiwa Pt
Puu Moiwi
Kealaikahiki Pt
Kuia Shoal
Smuggler Cove
Kamohio B
Alalakeiki Channel
(chart 4130)
8890

Chart - 4116

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8890

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
4130	1-12-71	E. Frey	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No. Examined, for ~~no~~ critical corrections
4116	4-15-71	J.C. Graham	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (Before)
			Drawing No. 16 Appl'd misc corrections thru cht. 4130 dwg. #14X
4179	5/10/71	S. McMillan	[redacted] Part [redacted] After Verification Review Inspection Signed Via (before)
			Drawing No. 9 No critical corr at this scale at time thru 4116 #16
4102	1/27/72	J. Graham	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed Via~~
			Drawing No. 28 Appl'd for critical corr only thru cht. 4116 dwg. #16
4180	3/15/72	E. Frey	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection Signed Via~~
			Drawing No. 11 Appl'd for critical corrections only thru cht 4102 dwg #28
4115	7/20/73	C.S. Forbes	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via (before)
			Drawing No. Appl for critical corrections thru chart 4116 #16.
4102	10/27/77	C.S. Forbes	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via
			Drawing No. Consider application Final. No additional corrections.
A179	12/01/77	C.S. Forbes	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. Consider application as Final. No additional corrections.
4130	12-30-77	M. Sagen	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via
			Drawing No. Examined Verified Survey - No corrections consider Final Application.
4116	12-30-77	M. Sagen CRT-I	Full ~~Part Before~~ After Verification ~~Review Inspection Signed~~ Via
			Drawing No. Examamined thru chart 4130 - No corrections, Consider Final application.
[redacted]			
19320	5/2/92	J. Sherman	No Cons / Fully appld